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CONTENTS

	Page
Flange Oilers	1
Louisiana Cypress Operation	3
Statistics	8
Otis Mills Placed in Operation	8
A Pump for Lumbermen and Loggers	8
The Story of the Steam Whistle	9
Worlds' Merchant Marine	10
Drawbar Pull	10
Trespassing Reduced to a Science	10
Depth of the Oceans	10

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Lima, Ohio



VOL. 7, No. 6 LIMA, OHIO OCTOBER, 1914

THE LOCOMOTIVE WORLD

PUBLISHED MONTHLY BY

THE FRANKLIN TYPE AND PRINTING COMPANY

H. C. HAMMACK, Editor

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THE FRANKLIN TYPE AND PRINTING COMPANY

Index to Advertisements, Page 19

FLANGE OILERS

F. W. Edwards, mechanical engineer of the Ohio Injector Company, presented a paper on this subject at the September meeting of the Western Railway Club. Mr. Edwards briefly sketched the history of the development of the flange oiler, and in speaking of the advantages of the flange lubricator he said in part:

There are numerous cases where a new locomotive was put into service and after thirty days it was necessary to take it into the shops to change tires because the flanges were worn down to the minimum; many other cases where 60 days service would wear the flanges to minimum, while on numerous roads 90 days appeared to be the absolute limit of service for a set of new tires. Every 1-32 inch flange wear requires the removal of 1-16 inch of metal from the tread of the wheel, and 1/8 inch flange wear would require the removal of 1/4 inch from the tread. On many roads this represents one year's tread wear. Taking this as our basis, we must figure on the removal of 1/2 inch to 5/8 inch of metal from the wheel tread every time a pair of wheels is taken into the shop for turning, on account of the flanges being worn to the minimum. This represents a loss of two years of actual mileage metal. The amount chargeable to the turning of a pair of locomotive driving wheels when the flanges are worn down to the minimum will vary. It was found that on an average it costs $40 for every pair turned. If this one expense could be eliminated, it does not require very close calculating to prove that a great saving has been made, and the cost of the maintenance per engine mile greatly reduced.

The application of the flange oiler works in with one of the foremost subjects of today—"Safety First." One instance that stands out more clearly than others was a switching engine in a Buffalo yard. This engine was working on a sharp lead going into the freight house tracks. The driving wheel flanges were worn so that they came in direct alignment with the

worn sides of the rail, but were not down to the minimum. Just as soon as these two lines come together, the driving wheel flange would grip on the rail, raising the engine over the rail and off the track. This was an almost daily occurrence. The flange oiler was applied in July, 1909, and the engine placed in the same service, leaving the flanges just as they were. A careful record kept on this engine up to December, 1912, shows that the engine was not off the track once during that entire time. Another engine in switching service that could not be run longer than three months without its being necessary to turn the driving wheels on account of sharp flanges was equipped with a flange oiler and oil applied to the forward and back drivers on each side of the engine; this engine ran 20 months instead of three months and made 39,785 miles, and the driving wheels were then turned for tread wear only. On one road, four heavy Pacific type passenger engines without flange oilers could make about 39,770 miles when flanges were reduced to the limit. These same engines in the same service with flange oilers applied made an average of 91,850 miles. On another road one Atlantic type passenger engine without flange oilers would only make 20,000 miles, when the flanges would be worn to the minimum. After flange oilers were applied in the same service this engine made 110,000 miles, a gain of 450 per cent, and the front tire flanges showed 1 5-32 in. full and the back tire flanges 1 3-16 in. full. There are other records of success fully as interesting.

In order to give some idea of the saving in dollars and cents, we have one instance where a road in switching service had one engine working in a yard by itself, and after one year's service with this engine equipped with flange oilers they showed a total saving of $400. On another engine doing similar work in another yard, $160 was saved. The amount of saving in both instances is based upon oil, driving wheel tires, track material and labor. These examples can be duplicated on any division or any number of divisions where flange wear is a source of annoyance.

It is a known fact that where there is excessive wheel flange wear there is also excessive rail wear, and the remedy for one is the remedy for the other. The flange oiler is the remedy and it has proven so effective that it would be a paying investment for the railroads if they equipped their engines with flange oilers for the saving of the rails only. The flange oiler is also an important factor in fuel economy, as it will reduce the friction between the wheel and the rail.

The initial cost of a flange oiler which will reduce the cost of locomotive repairs and track maintenance, and show economy in fuel is approximately $75 to $85 applied to a locomotive. The oil will cost from 16 cents to 18 cents a gallon, and one gallon is sufficient for from 500 to 800 miles of engine service, which would make the cost about 2 cents or 3 cents per 100 miles for oil. The cost of turning the tires on the average locomotive and the value lost in service, which on an average is about $125 to $200 per day, will more than pay for the initial cost and application of the flange oiler, to say nothing of the increased tonnage, fuel economy, derailments eliminated, saving on switch points and frogs, higher speed on curves with the greatest element of safety and more than doubling the life of rails on curves.—Railway Age Gazette.

Vice-President W. R. Scott of the Southern Pacific has issued, through the division superintendents, an appeal to all employees of the company, especially train and yard crews, for the benefit of passengers in sleeping cars. He asks them to increase their efforts to eliminate all unnecessary nocturnal noises, and furthermore, calls for suggestions for improvement of the service in this regard. He wants renewed attention given to the problem of doing away with the clanging of bells, tooting of whistles, hissing and sputtering of locomotives and shouting of trainmen in the vicinity of sleeping cars.

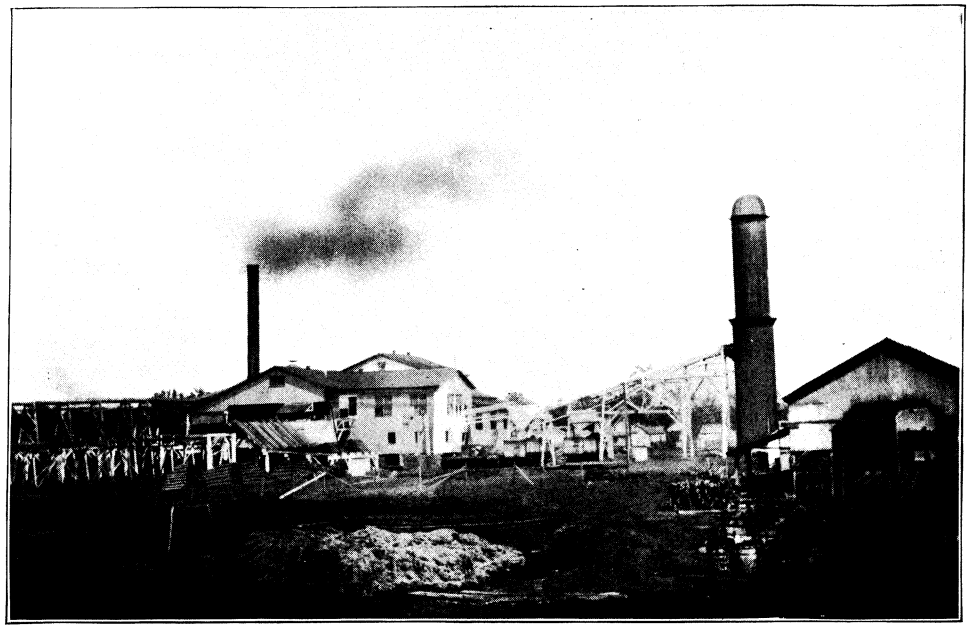
Powell Booklet

A neat little booklet describing "Powell Steam Whistles and Whistle Valves" has just been received from the Wm. Powell Company, Cincinnati, Ohio. This company manufactures a complete line of steam whistles which are designed to meet the most exacting requirements in volume of tone and intensity of harmonious sound. They make **Fire Whistles** and also special whistles for compressed air service. A copy of the booklet giving complete description of their various lines of whistles will be furnished free upon application to the company.

Louisiana Cypress Operation
Morley Cypress Company
Morley, Louisiana

IN the report of the Forestry Department of the Louisiana Conservation Commission published last May, it is stated that "Louisiana is the second state in the Union in the extent of its standing timber, being surpassed only by the state of Washington; that it possesses about 75 per cent of all of the Cypress standing in the United States."

The 1912 census report, which is the most recent bulletin published, shows that there are 460 mills in operation in the state of Louisiana and the annual production of the different varieties of



Sawmill of Morley Cypress Company, Morley, La.

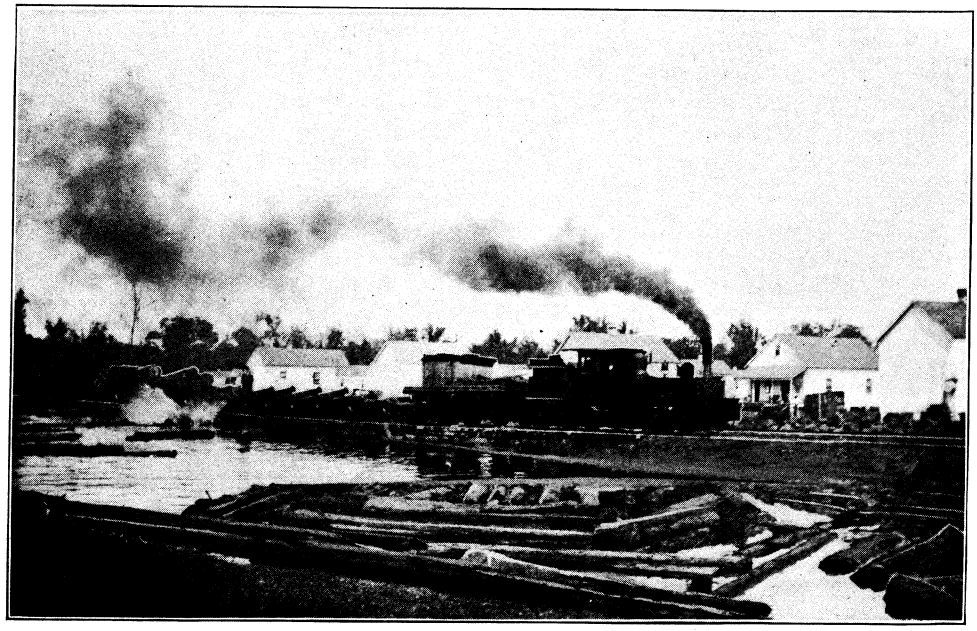
wood from these mills cypress ranks second; yellow pine being the first with 2,928,632,000 feet and cypress 653,737,000 feet.

In the statistical report issued by the Forest Service of the U. S. Department of Agriculture showing annual consumption of wood by the wood manufacturing industries gives cypress the tenth in the list and the consumption being 683,023,589. These general figures are given only to show that cypress ranks high in the different varieties of wood in this country.

The Morley Cypress Company which is located at Morley, Louisiana, is made up of Mr. H. T. Morley, President and General Manager, and Mr. L. M. Morley, Secretary and Treasurer. The office of the Morley Cypress Company is located in the Parish of West Baton Rouge, 95 miles from New Orleans on the Texas and Pacific Railway. Its nearest neighboring town is Plaquemine, a distance of ten miles. The town of Morley is unique in that the colored section of the town is separated from the white by a Bayou. There are about forty houses, Morley Cypress Company's store, dance hall, moving picture theater and doctor's office in the white town. There are about 125 houses, one church and a dance hall in the colored town.

The Morley Cypress Company's Sawmill is of frame construction with metal roof and cor-

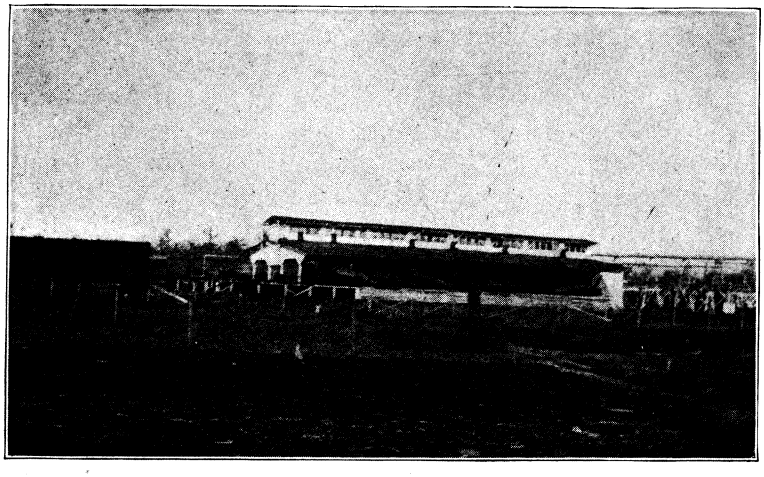
rugated iron siding, its dimensions are 43 by 175 feet, built of pine timber and concrete foundation. Off on a wing 45 feet by 75 feet from the main building they have installed a shingle and lath mill. Their power house is constructed entirely of brick and the equipment consists of four 72x 18′ boilers, 150 H. P. each; a 24 by 28 Hamilton Corliss Engine, together with electric light plant of sufficient capacity to light the entire plant and town.



Shay Locomotive and Log Train at Dump at Log Pond

The machinery in the saw mill consists of an Allis-Chalmers 9 foot heavy band mill, Pacific Coast type, wheels 9 feet in diameter by 12½″ face with 14″ saws. This mill has a 60″ opening between guides. There is also one No. 2 Allis Timber Edger, 72″ lumber space, having six movable saws shifted by means of wrought iron levers, complete with front and back tables. This mill is served with one left hand Allis-Chalmers No. 00 60″ opening carriages with three cast steel blocks and knees in cast steel racks and pinions with power set work.

One direct acting steam feed cylinder 12″ diameter, 42 feet long equipped with Allis-vertical 5″ steam feed valves. Two Allis pneumatic spring cushion carriage buffers 16″ x 24″ are placed at each end of carriage run. Heavy live rolls 12″ x 30″ with steel mitres with angle boxes and drivers. At the log deck there is one extra heavy double geared log jack with 3-arm log kicker with 3-arm log loader; One Allis oscillating steam nigger for turning logs on the carriage and one overhead log canter. All necessary transfers to and from the edger are supplied.



Planing Mill

One 6-saw over cut slab slasher complete with table floor chains, and one 10-saw overhead Allis trimmer complete with table, and having friction and gear drive feed works, saw being operated by hand levers, also timber trim saw in main rolls carrying 48″ saws. This completes most of the machinery on the sawing floor with the exception of the shingle mill machinery and lathe mill machinery which was supplied by the Challoner Company of Oshkosh, Wisconsin.



Sawmil Showing Chute Conveying Logs to Mill



L. M. Morley, Secretary and Treasurer

All the transmission and conveying machinery was supplied by the Allis-Chalmers Company.

The planing mill is of open frame construction 80 by 125 feet equipped with surfacer, matcher, two resaws, two rip saws and cut off saw. All this machinery was furnished by the S. A. Wood Machine Company of Boston, Mass. The matcher and planer is known as their No. 404 size 19″ x 6″. The surfacer is known as their No. 450 fast feed double surfacer 30″ x 6″. In addition to the above equipment they have a Woods No. 226, 36″ automatic knife grinder. The safety appliances on the machines is a distinctive feature on the Woods machinery. There are iron guards which are connected by board guards running from one to the other protecting the cylinder pulleys and cutter head drive pulleys. The importance of this is readily appreciated when we mention that with the countershaft running from 900 to 950 R. P. M. and the cylinder pulleys anywhere from 3000 to 3400, it can be readily seen that if the belt should break what the danger

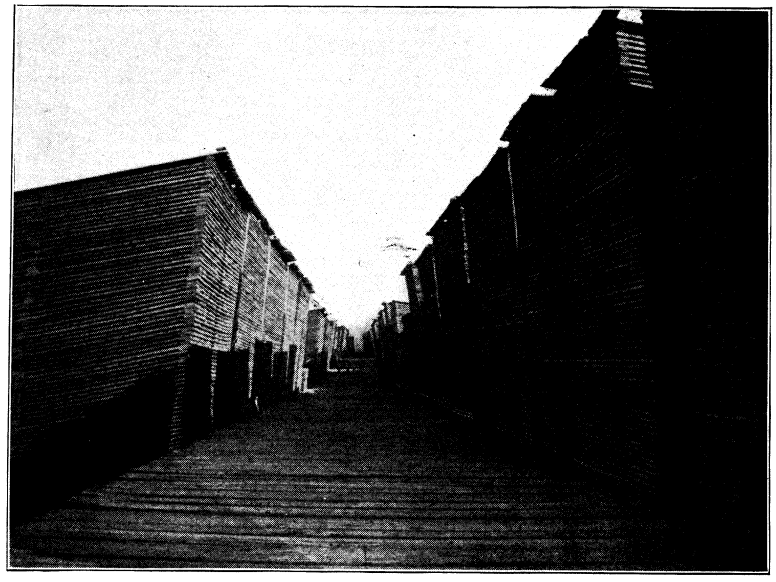


Cypress Logs

would be to things in general, let alone the extent to which the operator would be injured.

The power for driving this machinery is a 14″ x 36″ Frick Corliss engine. They do not use dry kilns, all their lumber being air dried, making their product, when ready for shipment, of the highest and most satisfactory quality.

The timber holdings of the Morley Cypress Company consist of 20,000 acres of cypress and hardwood. Cypress predominates, there being a limited quantity of hardwood. It is understood that their timber will average about 8,000 feet to the acre and is of good solid material.



One of the Alleys in the Lumber Yard

They operate a railroad 12 miles long, of standard gauge and built of 40 pound steel. For hauling they have two Shay locomotives, one a 24-ton and the other an 18-ton. They also have a small saddle tank engine. They started operating in 1907 and since that time the 24-ton Shay locomotive has done all of their main line hauling, making three trips per day with 12 to 16 cars to the trip and 2500 feet to the load. The 18-ton Shay locomotive is used in the woods for spotting cars and handling their logging machinery. The small saddle tank locomotive is used in spotting around saw mill yard. Their road is built practically on a level and as usual, among most cypress roads, is very roughly laid down.

Their logging machinery is a Lidgerwood 10″ by 12″ inter locking type with cableway skidder and loader with a 9″x10″ 4-drum loading engine. This method of loading is peculiar in that the cypress skidded in a distance varying from 600 feet to 715 feet, while being suspended over-head, and only one end slightly touching the ground. This appears to be the only successful method utilized today for loading cypress timber where it is possible to railroad same. By the use of an overhead cable and an engine which has been patented by the Lidgerwood company, especially for cableway work, very high speed is secured in skidding logs, and the character of the country has absolutely no effect on the re-



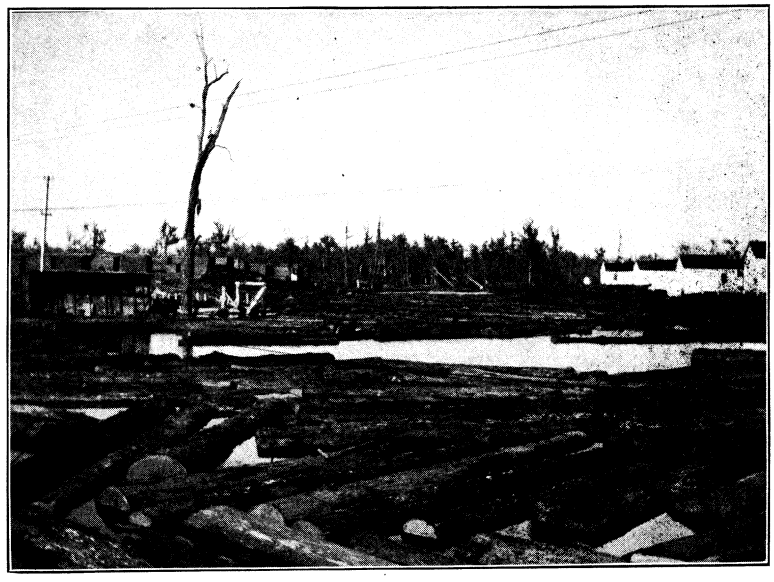
Tram Railroad Through Cypress, and Shay Locomotive

sults secured. This skidder is capacle of maintaining a capacity of 40,000 to 45,000 feet per day and if equipped with the latest patent slack puller it is believed that in anything near average cypress timber a daily capacity of 60,000 feet could be obtained.

We also understand from Mr. Morley that they are using a ground skidder made by the Russell Wheel & Foundry Co., of Detroit, Michigan.

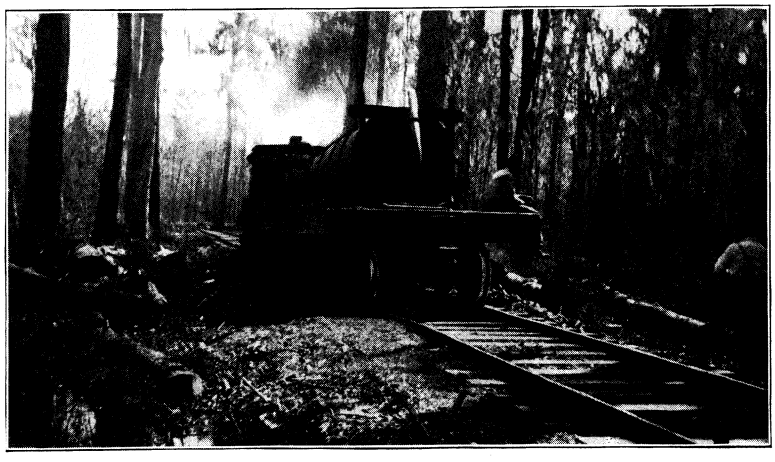
They have on their road 36 skeleton logging cars and at their plant they have a completely equipped machine shop and locomotive shed.

As stated above, back of the mill runs a typical Louisiana Bayou which performs the double purpose of acting as a log pond and also separates the white population from the colored. Messrs. Morley have been very thoughtful in providing them with various forms of amusement and have a complete billiard and pool room, barber shop and bath for their employees. They are working about 250 men.



Log Pond

One very peculiar point about this cypress operation which is not found at other plants, is that they bring in all the Spanish moss which is ordinarily found hanging from cypress trees and run it through a moss gin. It is then cleaned and prepared for commercial service. This material is principally used in all kinds of upholstering.



Shay Locomotive and Water Tank Car

The capacity of their mill is as follows:

Sawmill 55,000 feet, per day, 50,000 shingles, 25,000 lath.

The illustrations herein will give the readers an idea of the extent of their plant and operations.

Attention is especially called to the character of the railroad track in the views "Shay locomotive and water tank cars" and "Tram railroad through cypress timber and Shay locomotive." Another illustration which is interesting is that of the cypress logs showing the size of the cypress timber which they are cutting.

Considering that Cypress is probably the slowest growing of all American timber trees it is quite evident that the red cypress timber which is being manufactured by the Morley Cypress Company is many years old and they are producing some of the best cypress lumber in the state.

STATISTICS

As a general thing statistics are pretty uninteresting, but the few figures following are worth a railway man's attention, for they give him an idea of the vastness of the business in which he is engaged. Incidentally, they give an indication of the size of the job the Interstate Commerce Commission has on its hands.

An advance abstract of the statistical report of the Interstate Commerce Commission for the fiscal year ending June 30, 1913 (which is the latest report,) gives a number of interesting statistics with regard to railways having operating revenues above $100,000. Returns of switching and terminal companies are not included. On June 30, 1913, there were in service 63,378 locomotives, an increase of 2,102 over the previous year. Of this total number, 14,396 were passenger locomotives, 37,924 freight, 9,834 switching, and 1,224 unclassified. The total number of cars of all classes was 2,445,508, assigned as follows: passenger service, 51,700; freight service, 2,273,564; company's service, 120,224. These figures do not include private car lines. The total number of persons on the pay rolls of the steam roads was 1,815,239, and the amount of money paid in wages and salaries during the period referred to was $1,373,830,589. The number of passengers carried was 1,033,679,680, and the number of tons of freight was 2,058,035,487.—Railway Master Mechanic.

Otis Mills Placed in Operation—Will Make Plates and Sheets.

The Otis Steel Co., Cleveland, has completed and placed in operation the first unit of its new Riverside Works, in the Cuyahoga valley. The plant comprises a 3-high 72-inch plate mill, three jobbing mills, one of the latter being the widest mill of this type in the country, and two cold mills. This unit of the new works will produce light plates and sheets down to and including No. 18 gage.

The equipment of these mills includes every facility for the production of not only common tank plates, but blue and box annealed, pickled, cold rolled and patent leveled sheets. Although this plant has been in operation only a short time, the announcement of its opening has met with a very satisfactory response in the form of orders and sufficient tonnage to operate to full capacity for several weeks.

The old plant of the company, which is now known as the Lakeside Works, continues in operation, producing all grades of sheared plates in gages ¼ inch and heavier, in all widths up to 144 inches.—Iron Trade Review.

A Pump For Lumbermen and Loggers

Any mechanical device that serves to cheapen the cost of producing lumber is worthy of particular attention from manufacturers of lumber at this time. On a recent visit to the north, a representative of the Lumber World Review witnessed the operations of a rotary pump which, in the opinion of the writer, is destined to occupy an important place in future lumber manufacturing and logging operations. This is the rotary pump manufactured by the Blackmer Rotary Pump, Power & Manufacturing Co., of Petoskey, Mich. The especial merit of this new factor in logging and manufacturing channels is in its cheapness and general utility. The company claims for this pump a pressure to exceed 75 pounds and a steadiness and promptness of action which ensures the proper fulfillment of one of the essential functions in the extensive process of lumbering.

The Blackmer rotary pump is a means to an end, the object being the supply of a sufficiency of water for certain purposes within a short time. It is a handy contrivance, reasonable in price, easily operated and performs its work with an enthusiasm worthy of physical emulation. The pump was patented December 3, 1901, and improvements on it were patented October 22, 1907. A description of the pump will demonstrate its novel features and will be of interest to lumbermen in all departments. The pump comprises a cylinder with a revolving piston, in which are placed four buckets which in their revolutions are thrown out against the cylinder by centrifugal force and gravity. This exhausts the air in the water chamber and allows the atmospheric pressure to force the fluid into the pump and fill the extension chamber. As the fluid cannot be carried past the discharge, it is forced out and the pump is at all times kept suction tight. The friction itself is reduced to a minimum, which permits a large amount of fluid to be handled with a small amount of power. The pump is very positive in action and high in efficiency, which makes it a useful machine in isolated places, where there are no skilled men available to handle it. It is especially valuable in filling sprinkler tanks and railroad tanks, where large volumes of water are needed to be handled quickly and economically.

One of these pumps was on exhbition at the recent meeting of the Northern Hemlock & Hardwood Manufacturers' Association at Menominee, Mich., and was in charge of A. B. Klise, president of the A. B. Klise Lumber Co., now operating a saw mill plant at Gilchrist, Mich., and also president of the Blackmer Rotary Pump, Power & Manufacturing Co., of Petoskey. The small model pump which

Mr. Klise exhibited was mounted on a base with ¼-horse power motor and handled very easily five gallons a minute. About the only thing necessary to do, apparently, in operating this pump, was to turn on the power and the pump at once started, needing no priming and discharging the water in a second of time. The pump is made in a great many different sizes, its varying capacities being from 5 gallons to 500 gallons a minute and it has been found very useful in lumber operations.

Jackson & Tindle, of Pellston, Mich., report that in making ice roads last winter the Blackmer pump filled their tank in eighteen minutes. whereas before the work had required two men and a team and their ninety barrel tank had required practically ninety minutes to fill. The saving in labor as well as time is, therefore, easily demonstrated. The Standard Oil Co. is one of the principal users of this pump, having upwards of 1,000 of them now in actual use, their capacities varying in size from 5 gallons to 500 gallons a minute. The Standard Oil Co. uses these pumps largely in handling gasoline and kerosene, but their usefulness in handling water is fully as well demonstrated.

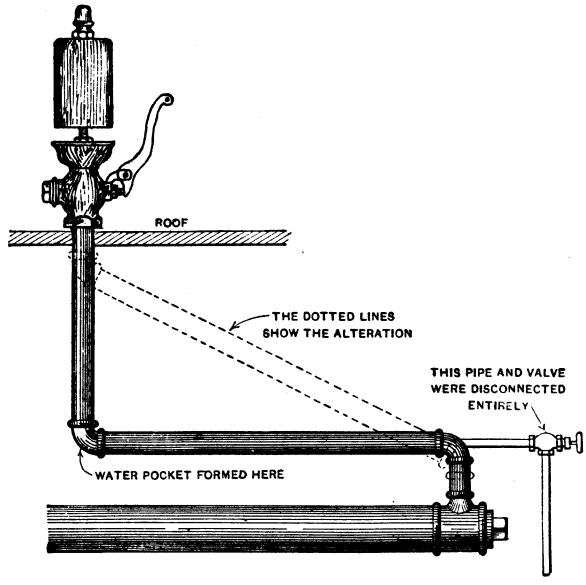
Mr. Klise is pleased to recommend this pump to his many friends in the lumber business, largely because of its simplicity and wearing qualities, there being no springs or adjustments of any kind to attend to. Judging from the model pump on exhibition at Menominee, the pump is a winner and one that lumbermen will do well to incorporate in their various activities, in not only sprinkling roads in the winter time, but in filling tanks and in numerous other ways at other seasons of the year. It is an all round helper, and lumbermen will be interested in examining closely into its various adaptabilities in their operations.—*Lumber World Review.*

The Story of the Steam Whistle

WHAT AILED THE FIRE WHISTLE

Some years ago our town voted to put in an electric fire alarm, and as a large part of the firemen were "call" men it was thought advisable to have a steam whistle attached to the circuit, so that all the firemen might be notified when at their usual vocations. From the first there was trouble in not being able to count the blows on the whistle, so one day the chief engineer of the fire department asked me to take a look at the whistle, and see if I could find out what ailed it. He said that the first blow and sometimes the second was so full of water that no sound came. Now, I immediately disclaimed any knowledge of fire whistles, but met with the remark, "Well you will look at it won't you?" This I consented to do. I knew that it must be piped up alright; the man who piped up the plant knew his business thoroughly, for I heard him say so, and so I reasoned that the fault could not lie with any of his work. But in thinking the matter over I decided in my mind where the fault was, and so took my spirit level with me when I went to examine the apparatus. The accompanying sketch shows the then existing state of affairs.

Upon putting my level upon the whistle pipe I found that at the end of the pipe where it



went up through the roof it pitched about two inches, making a pocket that was always full of water. Then there was a half-inch pipe leading to a receiver in the basement, but as the cut shows, this was on the wrong end of the whistle pipe to be of any benefit, and when the whistle was blown, water was forced up from the receiver as well as from the pocket, and the total water must have been half a barrel, making a fine fountain, but a poor whistle. Now, as to the remedy. My recommendation, which was adopted, was in the first place to disconnect the one-half inch pipe from the receiver, for as it is now used it would be unnecessary; and in the place of the elbow put in forty-fives, so that any condensation would return to steam pipe as fast as it was made. Also to cover all piping thoroughly. Now the first blow is as clear as any, and there is no trouble. I am inspired to write of this experience because this same trouble has been reported to me as occurring in a neighboring town lately, and there may be others whom this may benefit.

OLD MAN.

WORLDS' MERCHANT MARINE

Total of 39,059 Vessels, Sail and Steam, and Tonnage of 23,841,000

The Insurance Almanac gives comparisons of the Merchant Marine of the world, the returns being those of the Bureau Veritas, the French maritime reporting agency. The table covers all steam vessels of more than 100 tons burden and all sailing vessels of more than 50 tons burden for the year 1913-14:

	Sailing Vessels		Steam Vessels		Total No.
Countries	No.	Net Tons	No.	Net Tons	Vessels
Great Britain	4,945	935,000	6,594	10,786,000	11,539
Germany	2,993	1,215,000	1,510	2,853,000	2,551
United States	2,993	1,215,000	1,103	1,482,000	4,096
Norway	861	601,000	1,266	1,109,000	2,127
France	877	434,000	692	1,014,000	1,569
Japan	1,308	167,000	803	935,000	2,111
Italy	934	279,000	537	876,000	1,471
Holland	419	48,000	451	873,000	870
Russia	3,412	560,000	622	543,000	4,034
Sweden	1,117	162,000	940	641,000	2,057
Austria-Hungary	127	12,000	345	616,000	472
Spain	249	31,000	438	510,000	687
Greece	808	143,000	342	449,000	1,150
Denmark	615	79,000	470	429,000	1,085
Belgium	16	12,000	132	203,000	148
Various Countries	2,022	525,000	890	648,000	3,092
Totals	21,924	5,630,000	17,135	23,841,000	39,059

—Coal Mining Review.

Drawbar Pull

The question is often asked "How to figure the drawbar pull of a locomotive," and as this subject may be interesting to some of our readers, we give the formula in the following:

The formula for figuring the drawbar pull is exactly the same as for calculating the tractive power, and as you desire to calculate the drawbar pull of your engine we herewith give the formula, which is: T. P. $= \frac{d^2 \times S \times P}{D}$ in which T. P. = tractive power or drawbar pull; d^2 means the diameter of one cylinder in inches, multiplied by itself. S = stroke in inches, and P = pressure, usually taken as 85 per cent of the boiler pressure. D = diameter of the drivers in inches.

Trespassing Reduced to a Science

When a locomotive makes its first trip along the rails in an out-of-the-way place the natives look upon it with awe. The Chinese, for example, would not allow the "fire devil" to move until Li Hung Chang mounted beside the driver. After a while, on the other hand, this feeling of dread is changed to one of overwhelming confidence, especially on the part of men employed on the line and of people living close to it. The familiarity thus engendered leads to most of the fatalities among maintenance of way employees, trespassers, people at grade crossings and others walking along the line. It is said that in India the right of way is a favorite resting place of cowherds in particular and that the space between the rails has been proved many times to be quite safe to lie down in. When women and children are employed to unload ballast from a train they are fond of sleeping with their heads on the rails during the dinner hour, and it is necessary to walk along the train and awake them before it is moved in order to avoid wholesale decapitation. A recent incident occurred on the Eastern Bengal State Railway in which three natives engaged in maintenance of way work who had been set to watch the line by which the governor was to travel laid their ears on the rails, the better to hear the approaching train, went to sleep and were run over.—Railway Gazette.

Depth of the Oceans

The greatest known ocean depth is approximately the same as the greatest land height, but the average depth of the ocean bed is about 12,000 feet as against the average land height above sea level of 2,300 feet. Following are the greatest depths and areas of the five oceans:

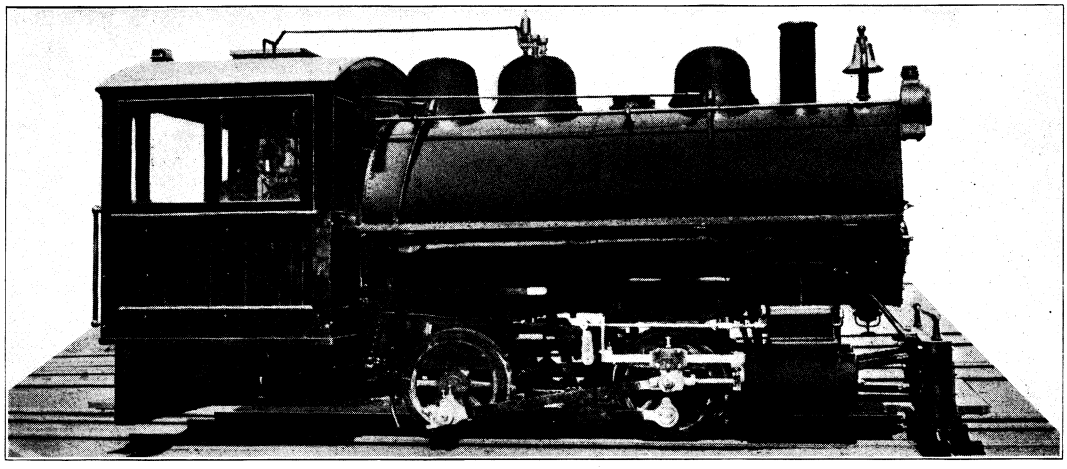
Oceans	Greatest Depth	Area
Pacific	31,000 feet	71,000,000 sq. miles
Atlantic	27,366 feet	34,000,000 sq. miles
Antarctic	25,200 feet	7,500,000 sq. miles
Indian	18,582 feet	28,000,000 sq. miles
Arctic	9,000 feet	4,000,000 sq. miles

The maximum depth of the Pacific Ocean is near the island of Mindanao, while in the Atlantic a spot off the coast of Porto Rico holds the record. The oceans, including the inland seas connected with them, cover about 144,500,000 square miles, or 73.39 per cent of the total surface of the earth, and the volume of water estimated to be contained in them is 232,800,000 cubic miles.—Export American Industries.

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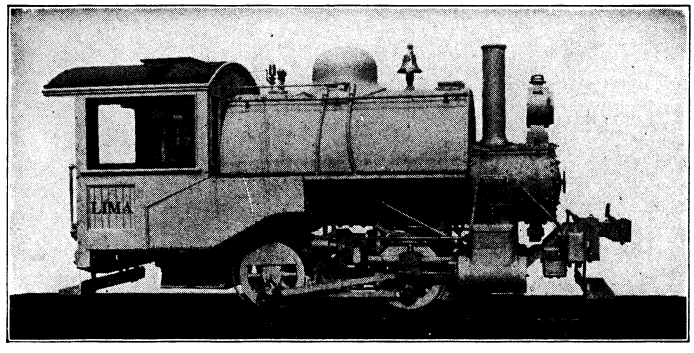
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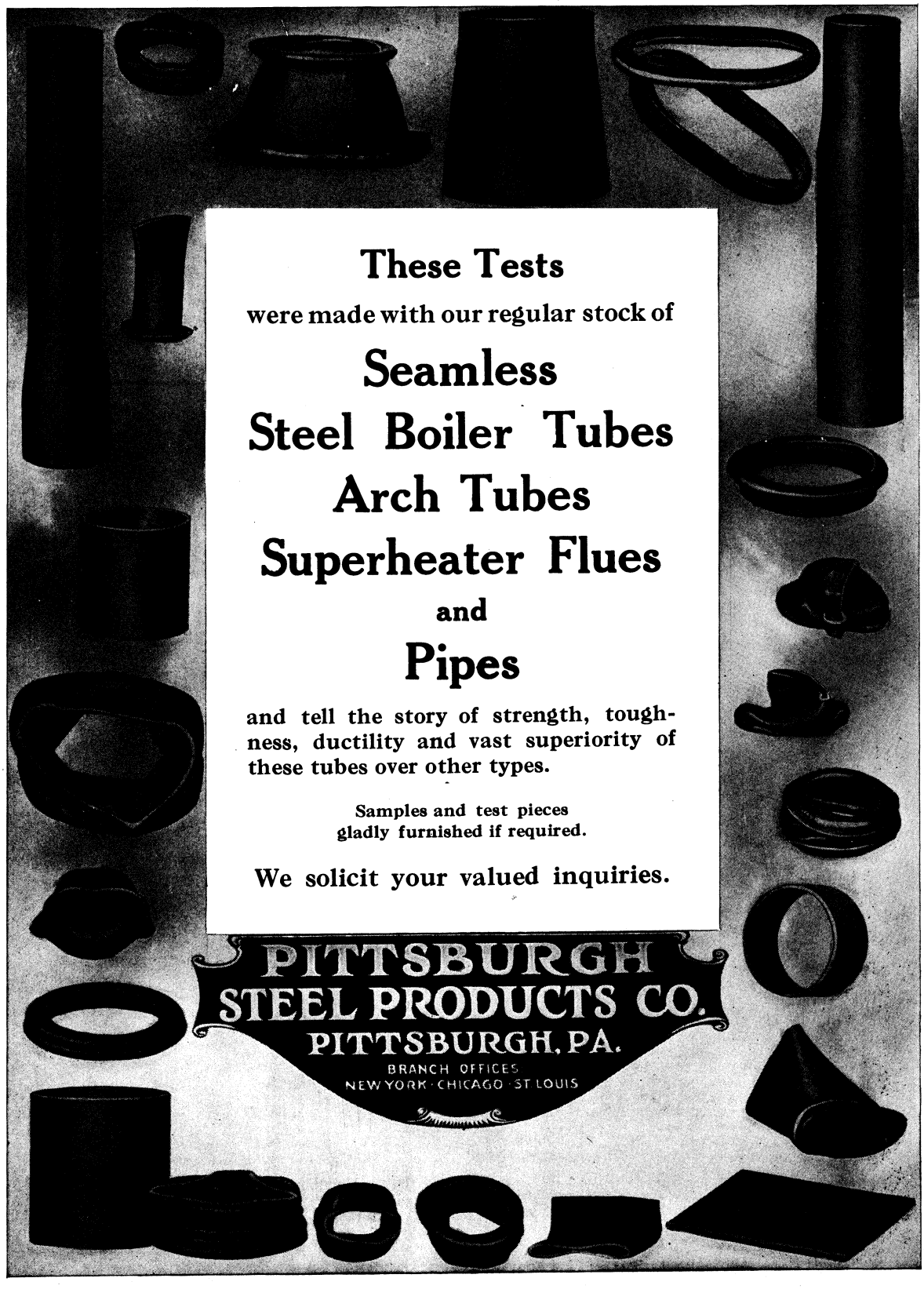
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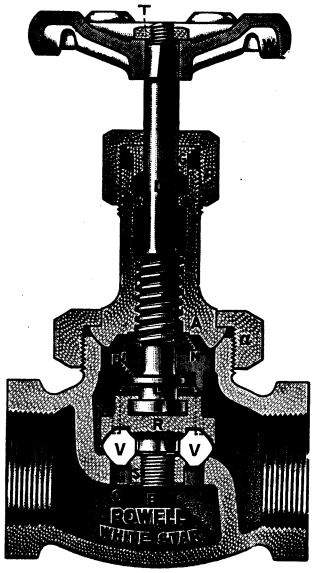
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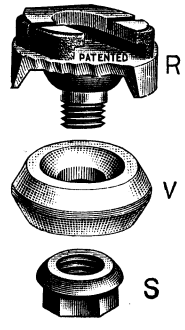
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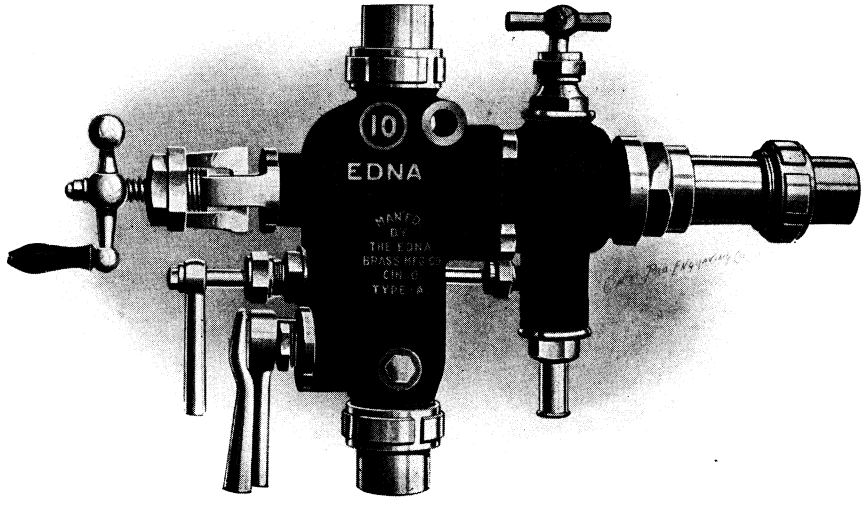
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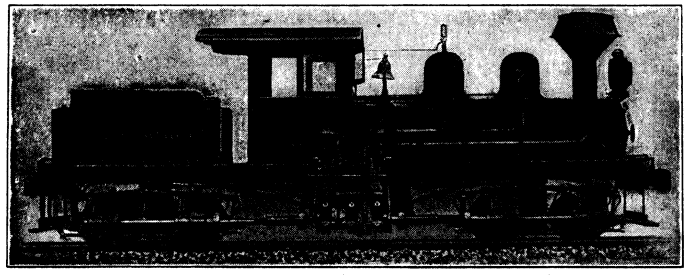
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INDEX TO ADVERTISERS AND WHAT THEY HAVE TO SELL

AMERICAN HOIST & DERRICK COMPANY
Log Loaders, Locomotive Cranes, Hoisting Engines, Derricks, Etc.....Inside Back Cover

AMERICAN LUMBERMAN.....Page 12

DIRECTORY TECHNICAL PAPERS....Pages 12, 13

EDNA BRASS MANUFACTURING COMPANY
Locomotive Injectors, Bearings, Valves, Etc.....Page 17

INDEPENDENT PNEUMATIC TOOL CO., Page 13

KUNKLE & COMPANY, E. B.,
Pop Safety Valves for Portable, Stationary, Locomotive and Marine Boilers.....Page 20

LIDGERWOOD MANUFACTURING COMPANY
Steam Skidders, Log Loaders, Logging Machinery, Etc., Outside Back Cover

LIMA EQUIPMENT COMPANY.....Page 18

LIMA LOCOMOTIVE CORPORATION
Shay Geared Locomotives.....Inside Front Cover

LIMA LOCOMOTIVE CORPORATION
Dinkey Locomotives.....Page 11

PITTSBURGH WHITE METAL COMPANY
Armature Anti-Friction Metal.....Page 15

PITTSBURG STEEL PRODUCTS COMPANY
Seamless Cold Drawn and Hot Rolled Boiler Tubes.....Page 14

POWELL COMPANY, THE WM.
Valves.....Page 16

RUSSEL WHEEL & FOUNDRY COMPANY
Logging Cars, Skidding and Loading Machinery.....Page 16

STANDARD TOOL COMPANY
Staybolt Taps, Machine Pipe Taps, Boiler Taps, Etc.....Page 19

THE SOUTHERN LUMBERMAN.....Page 12

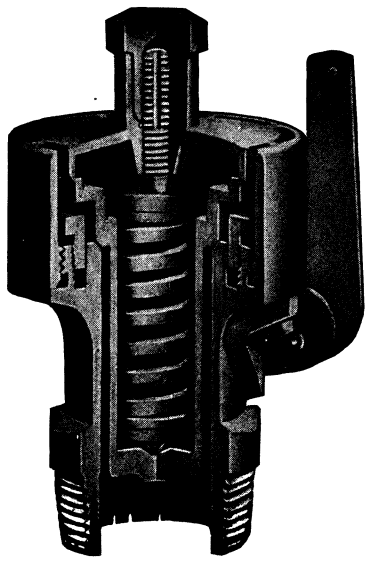
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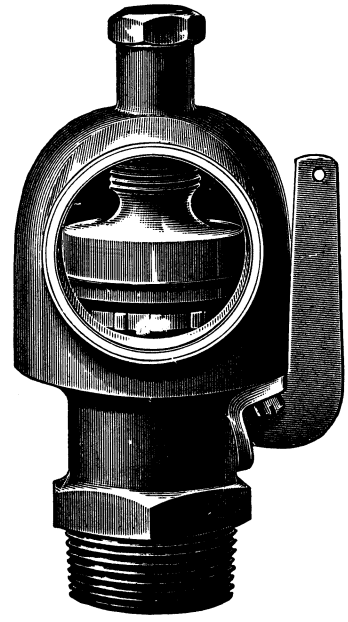
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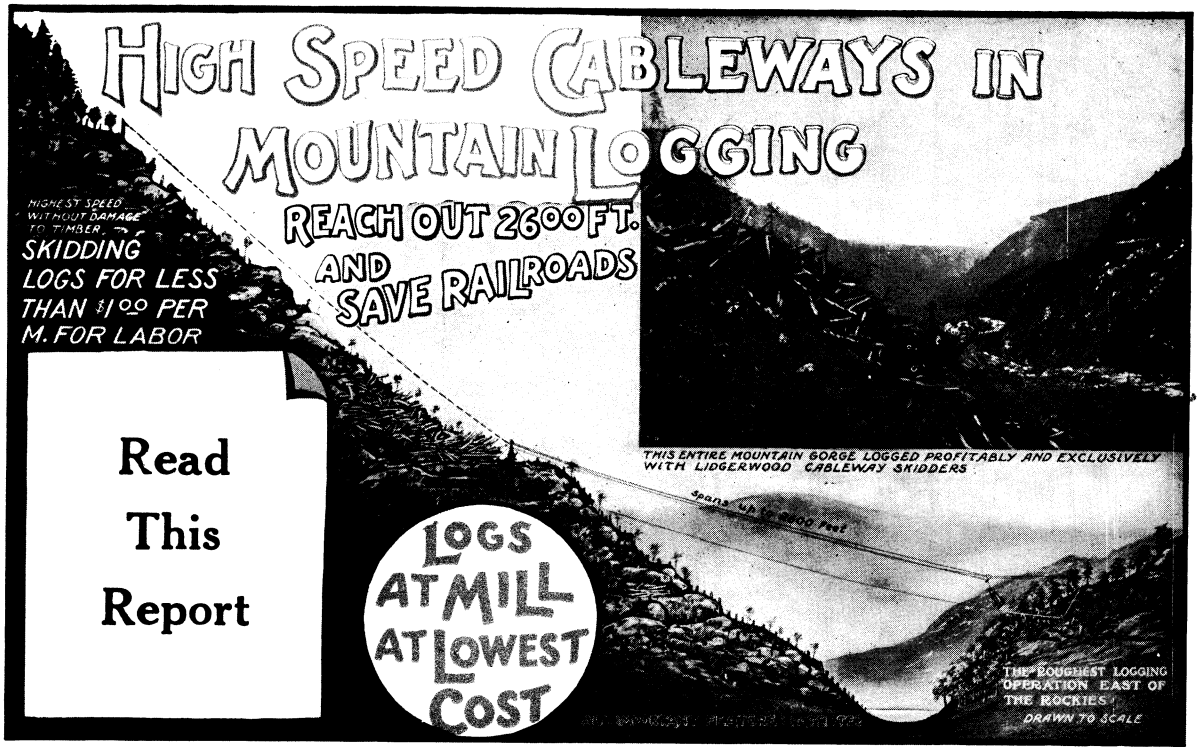
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